PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY

MEETING OF MAY 19, 1931

A regular meeting of the New York Entomological Society was held on May 19, 1931, in the American Museum of Natural History; President Andrew J. Mutchler in the chair with twenty-two members and eight visitors present.

The minutes of the preceding meeting were approved as read.

Mr. Curran suggested that the meetings for the coming year be conducted as symposia, the discussion being led by various individuals.

Three cicadas collected by Mr. Bell in Jamaica were exhibited by Mr. Davis. Mr. Davis spoke of *Diceraprocta* found not only along the shore of the southeastern coast of Jamaica, but also in Cuba, Grand Cama, and on the eastern coast of Florida.

Dr. Lutz gave an interesting account of the apparatus used and the results obtained from observations on the rhythm of activity of *Gryllus domesticus*.

Mr. Curran informed the society of a most valuable catch at Cold Spring Harbor, New York, namely two specimens of *Glutops singularis*. Only eleven or twelve specimens are known to have been captured and most of these in the vicinity of Ithaca, New York.

Mr. Lacey spoke of his success in winter collecting at Pelham, New York, during which time he had collected one specimen new to the New York State List, *i.e.*, *Neoharmonia venusta* (Melsheim).

Mr. Klein said his activities had been watching the emergence of damselflies from their cocoons on his table.

Mr. Moennich reported a carabid taken on April 4; an elaterid and a carabid on March 3; and a longicorn and a scolytid on May 10.

A woodbine feeding moth (pupa from Texas) was observed to hatch on May 19 by Mr. Englehardt.

Butterflies were scarce at Lakehurst, New Jersey, on May 10, according to Mr. Watson's observations. However, the first spring specimen of *Pyrgus tessellata* (Scudder), a male, was collected there on that day by Mr. S. A. Hessel. Mr. Watson spoke of the Museum's recent acquisitions of lepidopterous specimens from New Guinea, South America, and from Panama.

Mr. Wurster had observed male specimens of Io that were devoid of color, all in drab olives and gray, on emergence from the cocoon.

European specimens of *Papilio hospitans* from Corsica and Sardinia were exhibited by Mr. Hall.

Mr. King of the Japanese Beetle Parasite Laboratory at Moorestown, New Jersey, reported the appearance of colonies of Tiphia (Corean) at

Wilmont, Penna. In using both dipterous and hymenopterous parasites, the Laboratory had found that the dipterous parasites were giving the better results in aiding in the extermination of the Japanese beetle.

Mr. Curran spoke of a Procena which occurs in northern Japan.

Mr. de Ghika reported the appearance of a great variety of larvæ on wild raspberry, particularly *vasiliata*. Devia was found in March and continued until the sallow bloom.

Mr. Mutchler exhibited some cicindellids from Jamaica.

Mr. Ragot related a gruesome tale of some vultures that descended upon him while lying on the ground one day at noontime in Florida. Their quarry, however, was not Mr. Ragot but his lunch.

Dr. Pierce related some of his experiences with Strepsiptera and fungi in the Philippines, which will appear in "Short Notes" in the Journal.

MEETING OF OCTOBER 6, 1931

A regular meeting of the Society was held in the American Museum of Natural History on October 6, 1931; President Andrew J. Mutchler in the chair with twenty members and six visitors present.

The minutes of the preceding meeting were approved as read.

The program committee made a report for the next meeting.

Itineraries for entomologists in Europe in 1932 were distributed among the members.

The members gave the following reports on their Summer collecting. All agreed that insects had been plentiful during the summer months.

Mr. Angell had caught a specimen of *Sequas elevartus* on October 4.

Mr. Bromley gave an interesting account of a new species of tortricid attacking white pine, which is being described by Mr. Heinrich. Two incrustations of the Chinese mantis had been found in the region of Stamford, Connecticut. Despite the damp weather, vespids were abundant, the worst injury to fruit trees being done by *Vespis vulgaris*.

Mr. Curran described a curious habit of aquatic chironomous larvæ which had been observed to remove the posterior segments only of some twenty earthworms.

Mr. Davis exhibited a copy of the recent publication, "My Nature Nook," by W. S. Blatchley, and read some of the numerous references to Florida insects. Mr. Davis stated that the angled-winged katydid, *Microcentrum rhombifolium*, had been common in Staten Island gardens. On September 18, 1931, the windows on one of the Staten Island ferry boats had been attractive to many species of moths in their flight from the south. *Alabama argillacea, Heliothus obsoleta, Prodenia ornithogolli*, and *Laphyma frugiperda* were noticed especially. On September 27, a male black witch moth, *Erebus odora*, no doubt another migrant from the south, was found in a culvert on Staten Island. Mr. Davis read a reference to the abundance of monarch butterflies on October 1, 1798, in the diary of William Dunlop, 1780–1784, recently published by the New York Historical Society.

Mr. Klein spoke briefly on the dragonflies of northern New Jersey.

In speaking of his trip to Pasadena with Messrs. Davis and Englehardt, for the annual meeting of the A. A. A. S., Dr. Lutz mentioned the trap-door spiders that he had brought back with him in their own burrows. His son had called his attention to the alternating green and red eyes of the angled-winged katydid. The study of this phenomenon is now in the hands of Dr. Kendall of the Histology Department of the City College of New York.

Mr. Moennich had sent the results of his collecting on the dunes of Cape Cod to Mr. Leng. He had found from five hundred to a thousand beetles.

Mr. Lacey reported some clerids and some microscopic beetles found on the shore at Westport, Connecticut. He had had success in attracting nitidulids with pear bait.

Mr. Nicolay said that beetles had had a bad season at St. Simons Island, Georgia. Chrysomelids and weevils were present but cicindellids and others were scarce, the best collecting being in old abandoned houses. He reported an eastern monstrosity, *Cicindela purpurarea* from Lakehurst, New Jersey.

Messrs. Curran and Lutz led a discussion on the correlation between fleas and infantile paralysis, during which Simon Flexner's article on infantile paralysis in Science was quoted as disagreeing with any such correlation.

Mr. Sherman gave some interesting facts concerning the Knopf publication of Wheeler's translation of Reamur's "Natural History of Ants" together with the original. Decaying bark in the northern White Mountains of New Hampshire had yielded some Carabidæ during September.

Mr. Wurster displayed the dark male Io that he had bred and also a normal individual which is brilliant yellow.

Mr. Watson's report on Lepidoptera collected during the summer will appear in "Short Notes" of the Journal.

MEETING OF OCTOBER 20, 1931

A regular meeting of the Society was held on October 20, 1931, in the American Museum of Natural History; President Andrew J. Mutchler in the chair with twenty-one members and twenty-two visitors present.

The minutes of the preceding meeting were approved as read and corrected.

The report of the treasurer, Mr. G. C. Hall, was accepted as read.

It was unanimously agreed by the members to omit the regular meeting of the Society on November 3, 1931, it being coincident with Election Day, and to hold the next regular meeting on November 17, 1931.

As an introduction to Dr. Lutz's paper on "The Fauna of the Thermal Waters of Yellowstone National Park" (Novitates No. 498), Dr. Melander gave a short talk with carefully colored slides, to illustrate the great variety of brilliant colors and also the chemical content of the various geysers and their overflows and terraces in the Yellowstone National Park.

Dr. Lutz then read his paper, speaking of the educational nature work that was being done to acquaint the public with our National Parks; the

various museums located throughout the Yellowstone National Park, each specializing in a different feature of the natural history of the park, and also the work of the National Geographic Society along this line. In making careful observations on a stream in the Old Faithful geyser district, Dr. Lutz concluded that "temperature seems to be a controlling inorganic factor in the distribution of animal life, although the chemical characteristics should be more thoroughly considered and observed."

Dr. Copeland of City College of New York spoke briefly on the botany of the thermal waters.

Messrs. Curran and Mutchler commented on their identifications of the specimens of Diptera and Coleoptera brought back from Yellowstone National Park by Dr. Lutz.

Mr. Curran read a newspaper notice of the death of H. L. Viereck in an automobile accident in the Middle West. Mr. Curran reviewed Mr. Viereck's life and his work in Hymenoptera.

Meeting of November 17, 1931

A regular meeting of the New York Entomological Society was held on November 17, 1931, in the American Museum of Natural History; President Andrew J. Mutchler in the chair, with twenty-five members and twenty-nine visitors present.

Mr. C. H. Curran was appointed to act as secretary in the absence of Miss Sherman. The minutes of the preceding meeting were read and adopted.

The program committee reported that Dr. Lutz would give the concluding part of his paper on "Migration" at the following meeting and that another speaker would be announced in the Academy Bulletin.

The following were proposed for membership in the Society: Messrs. Charles Ballou, Harold C. Hallock, S. Hessel and Edgar G. Rex.

Dr. Lutz presented his paper, "Insect Migration, Part 1—The General Problem."

Dr. M. D. Leonard spoke briefly on outbreaks of Alabama argyllacea in Porto Rico and suggested that its appearance at various seasons of the year might indicate that Porto Rico might be a natural center of dispersal, the moths migrating north or south from this point.

Dr. Lutz pointed out that the great flights of the cotton boll worm adults to the north in the autumn could not be explained by temperature changes as suggested by Dr. Leonard as their flight carried them into a region of low temperatures.

Dr. Ernest N. Cory then read his paper on "Some Phases of Entomology in Maryland." Dr. Cory traced the history of Entomological work in Maryland from the appointment of Dr. C. V. Riley as head of the Department of Physiology and Entomology, in 1893, to the present time. The Department of Entomology was separated from Zoology in 1919 and all phases of the work of the department is centered under one head. It is believed that regulatory work should be 99 per cent. educational and this

feature has worked excellently in the state. The department has a fairly good library and in addition carries on extension, teaching and research work, the latter mostly in connection with fruit and field crop insects. Why certain insects have failed to secure a hold in Maryland has always been an interesting problem. Among the insects mentioned the Gypsy and Browntail moths have failed to become established in Maryland, although it is reasonable to suppose that numerous egg masses were imported on nursery stock before the enactment of quarantine No. 37. About 1,400 nests of the browntail moth were found on imported stock in the years 1909 and 1910. Only one grasshopper outbreak has occurred in the state during Dr. Cory's connection with the department and outbreaks of coddling moth, oriental peach moth and pea aphis have been sporadic. The Japanese beetle has not spread nor increased sufficiently to damage foliage or sod at Cambridge, where it has been present for five years. The presence of spotted fever in Maryland is causing some concern. Three species of ticks, *Dermacentor variabilis*, *Ixodes hexagonas* and *Haemaphysalus leporis-palustris*, have been collected in the spotted fever areas but so far have failed to give positive reactions. Dr. Cory extended a welcome to collectors to visit Maryland and promised every assistance in making their visits profitable.

Dr. Lutz explained that the belief of many people that the group of milkweed butterflies in the hall of insect life is exaggerated is erroneous. Actually this group represents only a small part of the great clusters of butterflies which at one time collected on certain trees in Connecticut during migration.

Dr. Cory stated that he had failed by twenty-four hours to witness a clustering of monarchs at Solomon's Island, Chesapeake Bay, Maryland, on September 24th of this year.

Mr. Curran spoke briefly on migration this year as observed by Dr. Sherwood, director of the Museum of Natural History. The migration, as observed at the spot where the Museum group was obtained, seemed to extend over an unusually long period and the nightly gatherings of the butterflies was small.

Mr. Angell stated that he had records of two species of lucanids from Maryland, *Lucanus elephas* and *Pseudolucanus capreolus*. This is a northern record for *elephas* while a dark variety as well as the typical form of *capreolus* occurred.

Mr. Hadley said that there was no real evidence of migration in regard to the Japanese beetle but there might be a definite movement or concentration. Establishment of the beetle in distant places was undoubtedly due to commerce. This insect provides an opportunity for tracing the rapid development of insects. A few were discovered in 1916 by Mr. H. B. Weiss at Riverton, N. J., and a few years later thousands were present. It will probably spread over the eastern half of the United States during our lifetime.

Mr. J. R. Wade extended a welcome to members of the Society to attend the meetings of the Entomological Society of Washington and reported that they had had excellent meetings this year. The Bureau of Entomology is now located in temporary buildings.

Dr. C. Crosby expressed his pleasure at being able to attend one of the meetings of the Society and remarked upon the control of potato beetles.

Mr. Englehardt drew the attention of the members to Böving and Craighead's paper on North American Beetle larvæ published in Entomologica Americana.

Mr. Davis showed specimens of *Scepsis fulvicollis* collected on Staten Island on October 20th and pointed out that in the State List of Insects the dates given were May to October. Mr. Lemmer reported taking the species this year at Lakehurst, N. J., about the middle of November.

MEETING OF DECEMBER 1, 1931

A regular meeting of the New York Entomological Society was held in the American Museum of Natural History on December 1, 1931; President Andrew J. Mutchler in the chair with thirty-four visitors and twenty-two members present.

The minutes of the preceding meeting were approved as read.

The program committee reported that Dr. Edward F. Roberts of the Lederle Laboratories would be the speaker at the next meeting.

Messrs. Ballou, Hallock, Hessel and Rex were elected active members of the Society.

Mr. Watson read a review of the new and revised edition of Dr. Holland's "Butterfly Book" which will appear in the Journal of the Society.

Mr. Davis exhibited five specimens of cicadas; four from China taken by Mr. Herclots, and one from Laguna, Philippine Islands, taken at light by Miss Irene D. Dobroscky. He pointed out the lack of bilateral symmetry in the markings on the hind wings of the two *Platypleura hilpa* Walker, from near Hong Kong, China. In both males the band near the end of the hind wing failed to reach the hind border on the left side, while the hind border was reached by the band on the right side. It was thought remarkable that the same irregularity should appear in the same way on both specimens. All of the cicadas were sent by our member, Miss Dobroscky, who is rearing parasites in the Philippines to be sent to the Experimental Station of the Hawaiian Pineapple Canners. Miss Dobroscky describes Laguna as an entomologist's paradise. "There are leaf hoppers as big and beautiful as butterflies," she writes. "The sun sets all too quickly for a collector, but even at night the collecting is fine around lights. I eat my dinner with a cyanide bottle in one hand and one eye cocked on the swinging bowl-like chandelier."

Dr. Lutz reviewed with very favorable comments Williams' book on the "Migration of Butterflies," reaching the conclusion that, in spite of a great deal of observational data, we really know nothing definite concerning either the cause of the mass-movements of insects or the factors which

direct them. The experimental work of Rowan on birds was reviewed but it was felt that, applying the mathematical law of random dispersal, Rowan had not proved induced migration and that even his proof of increasing ordinary activity is open to some doubt. The best experimental work on the factors concerned in the mass-movements of insects has been done with migratory locusts. In this connection the work of Uvarov and others was discussed in some detail.

Dr. Felt read his paper on "The Control of Insects Affecting Shade Trees and Ornamentals." The scanty foliage and dead limbs of many of the shade trees throughout the state is a deplorable condition. A shade tree is entitled to as much protection and care as a fruit tree. Only a healthy tree has a high resistance to such pests as the bronze birch borer, the red cedar and the chestnut borers. To overcome the effect of drought, the placing of food, such as humus, for a considerable area around the base of the tree and also the use of fertilizer is necessary. The outgrowth of injury may be accomplished in the same way. The controls for the elm leaf beetle and the Japanese beetle are not sufficiently effective on ornamentals. Also it must be understood that the dormant season is the time to use the controls. It is impossible to change the environment of a tree without incurring serious damage.

Mr. Davis exhibited a male *Colias* butterfly which was either *eurytheme* or *philodice,* no conclusion having been reached though the specimen had been examined by a number of the members before being brought to the meeting. The butterfly greatly resembled *philodice,* except for a flush of orange below the discal spot of each fore wing as in many specimens of *eurytheme.* The fore wings are narrowly margined with black as is usual with *philodice,* and beneath, it also resembles that species. It and many other *Colias* were flying about near the docks at Tompkinsville, Staten Island, on November 22, 1931, when the thermometer recorded 71 degrees (F.). Mr. Davis called attention to the article in the Scientific Monthly for August, 1931, by Austin H. Clark on the "Extirpation of One Butterfly by Another," which includes observations on *Colias eurytheme* and *C. philodice.* The first named butterfly has steadily invaded the territory of *philodice* during recent years.

Mr. Curran called attention to the fact that *Eristalis brousii,* a species native to the eastern United States, has been driven west of the Mississippi River by the foreign species *arbustorum,* which has taken possession of the territory east of the Mississippi.

Mr. Watson reported the following late records of butterflies seen:

Colias philodice (Godart), 2 individuals, and *C. eurytheme* (Boisduval), 2 individuals, at Garden City, L. I., on November 22, 1931, by J. T. Nichols. Also, *Colias philodice* (Godart), 3 individuals and one large dragonfly with a blue abdomen, possibly *Anax junius,* were taken in Central Park, New York City, on November 24, 1931, by Mr. Watson.

MEETING OF DECEMBER 15, 1931

A regular meeting of the New York Entomological Society was held in the American Museum of Natural History on December 15, 1931, at eight o'clock; President Andrew J. Mutchler in the chair with twenty-five members and twenty-three visitors present.

The minutes of the preceding meeting were approved as read and corrected.

The program committee announced that Dr. Harvey Bassler would be the speaker at the next meeting, which would be the Annual Meeting of the Society. Also the committee reported a series of topics on the Biology of Insects to be given at the various meetings through the spring of 1932.

Mr. Watson read a communication to the Society concerning the collection of Phytometrinæ which Dr. R. Ottolengui has donated to the Museum and which has been incorporated in the Museum collection and is available for students' use.

Messrs. Davis, Bromley and Horsfall were appointed as a nominating committee of the officers for 1932–1933, to report at the next meeting.

Dr. Edward F. Roberts, of the Lederle Laboratories at Pearl River, New York, read his most interesting paper "The Clinical Application of Blow Fly Larvæ."

Dr. Roberts then showed two reels of motion pictures of the work of Dr. McClellan, of Pittsburgh, showing the stages of development and the breeding of the maggots, and the treatment of wounds in cases of chronic osteomyelitis with the wonderful results of this treatment.

Also, the members were privileged in seeing Dr. Baer's own lantern slides of his method of maggot therapy and the results of his work.

In response to Dr. Lutz's motion, there was a rising vote of thanks to Dr. Roberts for his interesting paper.

Mr. Sherman exhibited a copy of Bibliographie Entomologique by Charles Nodier, published in Paris in February, 1801 ("An IX"), the first entomological bibliography, a small work $3\frac{1}{2}'' \times 6\frac{1}{4}''$ of viii + 64 pp. and exceedingly rare, due to the author's efforts to destroy the entire edition, after it had been rather severely criticized. The only other copy ever seen by Mr. Sherman is in the Library of Congress. The entire work is reproduced on pages 241–278 of the volume on Nodier published by Hermann in 1911, with a preface by Bouvier. The author of the 1911 book mentions the great difficulty he had in obtaining a copy of the original work.

ANNUAL MEETING, JANUARY 5, 1932

The thirty-eighth annual meeting of the New York Entomological Society was held in the American Museum of Natural History on January 5, 1932; President Andrew J. Mutchler in the chair with twenty-one members and thirty-nine visitors present.

The minutes of the preceding meeting were approved as read.

The treasurer, Mr. Hall, announced that his report would be ready at the next meeting.

The librarian, Mr. Watson, reported the accessions to the library during 1931.

The nominating committee submitted the following nominations for officers for 1932–1933: Andrew J. Mutchler, President; Ernest L. Bell, Vice-president; Elizabeth Sherman, Secretary; Gaylord C. Hall, Treasurer; Frank E. Watson, Librarian; Andrew J. Mutchler, Curator; Executive Committee, Wm. T. Davis, Dr. Wm. Moore, Herbert F. Schwarz, Howard Notman, Henry Bird; Auditing Committee, E. L. Bell, Dr. E. K. Schwarz, Dr. E. R. P. Janvrin; and Delegate to the New York Academy of Sciences, William T. Davis.

There being no other nominations, it was moved that the secretary cast an affirmative ballot re-electing these officers and committees for 1932–1933. This was accordingly done.

President Mutchler re-appointed the following committees: Publication Committee, Harry B. Weiss, C. W. Leng, J. D. Sherman, Jr., C. E. Olsen; Program Committee, C. H. Curran, Harry B. Weiss, J. L. Horsfall; Field Committee, A. S. Nicolay, and Mrs. Nicolay.

The program committee reported Dr. Wm. Moore and Prof. C. L. Fluke as speakers at the next meeting.

Mr. Davis exhibited a copy of the *Bulletin of the New York Public Library*, for December, 1931, containing an article by Mr. Harry B. Weiss entitled "William Charles, Early Caricaturist, Engraver and Publisher of Children's Books"; also, the January, 1932, number of the *American Book Collector*, of which Mr. Weiss is co-editor. This magazine contains an interesting review by Mr. Weiss of a rare pamphlet on banking by Rafinesque, best known to us as a describer of plants. Mr. Weiss, it was pointed out, had become one of the chief historians of the early writers on American entomology, as well as being the co-author of the life of Thomas Say, the father of that branch of science in America.

Mr. L. R. Colt, of Fountain Valley School, Colorado Springs, was proposed for membership in the Society. On motion, Mr. Colt was elected an active member of the Society.

On motion, the resignation of Mr. John M. Sheridan and Mr. Erdman West were accepted.

Professor Herbert Ruckes, of the College of the City of New York, read his paper on "Sex Determination and Intersexes," the first of a series of papers on the Biology of Insects to be given during the year by various specialists. "In insects sex is determined at the time of fertilization. The mechanism for this lies in the constitution or the chromosomal make-up of the germ cells. In the majority of insects that have been studied the male cells (sperm) are distinct from the female cells (egg) inasmuch as the males have either an XO or an XY set of sex chromosomes in addition to the normal autosomes of the cell, while the females have a set of XX chromosomes in addition to the normal autosomes. This makes the male

cells the sex determiners. In the Lepidoptera the situation is reversed, for here the females are the sex determiners and the formula for the germ cells, in order to keep the types distinct, is for the male cells ZZ, and for the female WZ.

"Two kinds of sex determination are recognized by the zoologist; that which is called *zygotic*, such as is illustrated in the insects where the sex is determined at the time of fertilization by the combination of the sex chromosomes, and the *hormonic*, such as occurs in the vertebrates, where after the sex is determined at fertilization it may be modified by the action of endocrine or hormone producing glands. In this paper we are concerned only with the former case, since Meisenheimer, Oudemans, Hegner and others have conclusively proved, by experiments on transplants of gonads and by castrations that there is apparently no hormone that plays a rôle in insects as there is in the vertebrates.

"The major part of the paper was given over to a discussion of the work of Goldschmidt (Richard) who in his paper on "Erblichkeitsstudien an Schmetterlingen" studied and explained the cases of intersexes in *Lymantria dispar*, the gypsy moth.

"Goldschmidt discovered that if a male of a Japanese race of *L. dispar* is crossed with a female of a *European* race, the males of the F_1 generation are all normal but the females give evidence of some intersexuality, *i.e.*, there are some females that have secondary male sexual characters. This work led to other crosses being made, between males of many Japanese races and females of either, different Japanese races, or of European races. The results gave a completely graded series from one extreme in which the abnormal females showed only slight degree of intersexuality to the other extreme where the females were all male in their appearance. Goldschmidt explained that it was necessary to assign arbitrary numerical values to the sex determining chromosomes of both the male and the female cells, and in addition place a sex determining value on the cytoplasm or other parts of the chromosomal constitution.

"In the chromosomal formula ZZ WZ he added another factor F which would stand for femaleness. The arbitrary values assigned are as follows:

F	W	Z	(Female, called by Goldschmidt FmM)
80	0	60	

in which case the factor F had 20 units more strength than the factor Z (M), hence the appearance of female characteristics.

F	Z	Z	(Male, called by Goldschmidt FMM)
80	60	60	

in which case the combined factors ZZ (MM) totaled 120 units or 40 units greater than the single factor F, hence the appearance of male characteristics.

"Since different races could have different values for the potential of the sex chromosomes, it stands to reason that crosses could be made in which the relationship between the units for femaleness and maleness could be

different than the ones above assigned. When a female appears with the constitution in which the chromosomal potential leans toward the male proportion, the individual, while yet female can exhibit male characteristics. If the proportion between female factors and male factors totals 0 (zero) then there appears a pure intersex, a female in body but with all external male characters, such as a cross made between a weak European female and a strong Japanese race male, *i.e.*

European race ♀				Strong Japanese race ♂		
F	m	M	and	F	M	M
80	0	60		100	80	80

gives: normal males
intersex females with the formula:

F	m	M
80	0	80

a ratio between the sex potentials of 0 (zero).''

The Society was honored by the presence of Dr. T. D. A. Cockerell and Mrs. Cockerell, who had just disembarked from their ship on their return from an extended trip through Africa, including the provinces of Angora, Belgian Congo, the Transvaal, and Cape Province. Dr. Cockerell spoke very briefly on the remarkable opportunities for any and all collectors in Africa. Their party of five had travelled with ease and comfort during the dry season, and had had great success in the various fields for which they were collecting.

Dr. Harvey Bassler spoke on ''The Entomological Contacts of a Tropical Geologist,'' relating his many interesting experiences at Iquitos on the Amazons of Brazil and Peru and in the head-hunter country of Peru. *Stegomyia, Culex quinquetans* are the domestic mosquitoes of Inquitos, while the most troublesome sylvan species are those belonging to Psorophora and certain rain-pool breeding species which belong to the genus Aedes, also *Monsonia indubitans* is very conspicuous in this respect. *Anopheles darlingii* is the principal malaria carrier on the Upper Amazon. *Anopheles gambii* has been introduced very recently from West Africa to Brazil. The edible grub from palm trees is probably *Dynamis borassi* (Fabr.) closely similar to the well known *Rhyncoporus palmarium* of the Caribbean region and the coastal area of South America. The ''train grub'' whose head is phosphorescent red, tail a phosphorescent green, and the segments of whose body give the appearance of a double row of white lights belongs to the family Phengodidæ. The larvæ of Dynamis are called ''suri'' in Eastern Peru and the larva of *Dermatobia hominis* is called ''sututo.'' The great ponerine ant, *paraponera* is called ''insula.''

Dr. Bassler then showed lantern slides which gave the high lights of travel and living conditions on the Amazon and in the foothills of the Andes. He also exhibited two very excellent specimens of the dried heads which are prepared by the head-hunter tribes of Peru. The female head and the male head had been reduced to approximately one third their normal size.